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ABSTRACT

A review of the literature reveals little evidence that classroom decision making is an important component in teaching effectiveness. Studies investigating decision making before (preactive) and during (interactive) instruction indicate that teachers are preoccupied with activity flow and procedural concerns rather than with increasing student understanding. Three lines of reading research--teacher decisions about reading groups, teacher interruption behavior during children's reading, and teacher use of basal materials--also reveal little decision making behavior. These findings may indicate, however, not that teachers fail to make instructional decisions, but that research methodology lacks the sophistication to identify teacher decision making. Current research may make false assumptions about how teachers make use of knowledge, may fail to reflect the complexity of instruction itself, or may not understand teachers' limited control over instructional materials or practices. (MM)

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INSTRUCTIONAL DECISION MAKING AND READING TEACHER EFFECTIVENESS

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Abstract

The authors discuss the effectiveness of reading instruction, in particular, the contrast between the typical reading educator's expectations about his/her role of decision making in effective instruction and the amount of decision-making noted in research of actual classroom practice. In studies of reading practice the authors found few examples of decision making. They suggest that effective teachers *do* make instructional decisions but that researchers' ability to isolate such decisions depends upon an understanding of both the teacher's environment and the nature of instruction.

INSTRUCTIONAL DECISION MAKING AND READING TEACHER EFFECTIVENESS[1]

Gerald G. Duffy and Deborah Ball[2]

Educators often assume decision making to be integral to effective instruction either because they assume that teachers have alternatives from which to choose or because they assume that a teacher who reflectively identifies alternatives is more effective than one who merely reacts or follows a teacher's guide.

In the typical scenario, a teacher collects a variety of data about pupils, thinks about these data in terms of a theoretical orientation or a particular belief system, and then makes decisions about how to instruct. The decisions are reflective, involving selection from among alternative hypotheses based both upon the data collected and the parameters of the teacher's theory or belief system. Hence, Kamil and Pearson (1979), representing reading, argue that the theoretical orientations of teachers result in differential decisions because "different models dictate different (and sometimes opposing) instructional methods." Cooney (1981) makes the same point about math education, saying that teaching

> is a process of gathering information, making a diagnosis, and constructing a response based on that diagnosis. While much of this process may be quite automatic, some situations require conscious decision making. The act of generating and considering alternatives in constructing a response--that is, making an instructional decision--is of paramount importance in teaching. (p. 67)

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[1]This paper is forthcoming in a publication of the International Reading Association on reading teacher effectiveness.

[2]Gerald Duffy is co-coordinator of the IRT's Teacher Explanation Project and a professor of teacher education at Michigan State University. Deborah Ball is a graduate assistant with the IRT.

Similarly, characterizing research on teaching generally, Clark and Yinger (1979) describe the teacher as

> constantly assessing the situation, processing information about the situation, making decisions about what to do next, guiding action on the basis of these decisions, and observing the effects of the action on the students. (p. 247)

Positions such as these are based on two assumptions about teaching and teacher effectiveness. First, it is assumed that there are indeed alternatives from which classroom teachers can choose. Second, it assumes that the teacher who is reflective in identifying such alternatives is more likely to be effective than the teacher who merely reacts or follows a teacher's guide.

Surprisingly, there is little evidence that such teacher decision making is an important component of instructional effectiveness. In fact, it is unclear at this point whether the kind of decisions described by Kamil and Pearson, by Cooney, and by Clark and Yinger are made at all.

In this paper we will examine instructional decision making as it relates to the instructional effectiveness of reading teachers. We review the existing research and suggest reasons for the lack of a relationship between reflective teacher behavior and instructional effectiveness.

Background

Reading educators assume the importance of instructional decision making. They are uncomfortable (1) with researchers (e.g., Rosenshine, 1981) who argue for the creation of "master developers" who can write instructional scripts rather than for the development of "master teachers" who make their own decisions, and (2) with instructional programs such as DISTAR[3] that seemingly leave little decision making to the teacher.

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[3]DISTAR is a commercial reading program published by Science Research Associates (Chicago) in which much of the direction to teachers takes the form of scripts.

There are two explanations for this belief.

One lies in the complexity of reading and reading instruction. Reading educators believe that reading is not a one-dimensional skill that can be "taught" with scripts. Instead, reading involves a variety of cognitive processes, abilities, skills, and affective conditions that lead to a variety of outcomes. Further, the students are themselves complex, representing various knowledge backgrounds, experiences, abilities, and aptitudes. When the complexity of reading interacts with the complexity of students, a variety of potential instructional alternatives become possible. Hence, reading educators view instruction as a continuous selection from among alternatives.

The second explanation lies in the reading educator's belief that teachers are professionals, not technicians. The tension that exists between these two kinds of behaviors is illustrated in Gage's *The Scientific Basis of the Art of Teaching* (1977). On the one hand, Gage argues for professional behavior when he writes that "no one can ever prescribe successfully all the twists and turns to be taken as the . . . classroom teacher uses judgment, sudden insight, sensitivity, and agility to promote learning" (p. 15) and when he argues that teaching is an art that calls for intuition and improvisation as well as "departures from . . . rules, formulas, and algorithms." However, he also suggests technical behavior by describing the real role of the teacher as "bringing the student into . . . interaction with the instructional materials" and by claiming that materials, much more than teachers, are actually responsible for providing content coverage.

This conflict between the teacher as technician or manager of the instructional environment and the teacher as a professional who thinks and makes judgments is fundamental to understanding the position of reading educators. While the technician uses the science of instruction in relatively inflexible ways, the professional adapts scientific knowledge to meet the shifting

demands of the instructional situation. Reading educators typically subscribe to the latter and, as a result, put a priority on decision making.

However, there is little evidence that decision making is important for teacher effectiveness. In reviews of teacher effectiveness research Brophy, 1979; Duffy, 1981; Medley, 1979), there is little mention of decision making. Instead, the most heavily emphasized correlates of effectiveness are the amount of allocated instructional time, the amount of time in which students are engaged on task, the degree to which the teacher maintains an academic focus, the closeness with which the teacher monitors student response, and the pace maintained by the teacher to insure content coverage. In short, the focus is on efficient instructional management, either in terms of generating more instructional time or keeping pupils engaged.

Similarly, there is little evidence of decision making in studies of classroom reading practices. For instance, Durkin's (1978-1979) now classic study of classroom comprehension instruction portrayed teachers "assessing" and "mentioning" comprehension, neither of which suggests that teachers make decisions or select from among alternatives. Similarly, Duffy and McIntyre's (1982) study of six primary grade teachers provided little evidence of instructional decision making. Instead, they report that the teachers "operated within the guidelines of the basal text and its affiliated workbook and, in effect, abdicated instructional decision making to these materials" (p. 19).

In sum, while reading educators believe in the importance of decision making, it has not yet been established as an important aspect of teacher effectiveness, and studies of practicing classroom teachers indicate that even effective teachers engage in little reflective decision making during reading instruction. Despite this, researchers have recently learned some things about how teachers decide what to do and what they think about during instruction.

Research on Teacher Decision-Making[4]

A variety of both laboratory (simulation) and classroom-based studies has been completed to learn more about how teachers think about what they do. However, studying this invisible world of thinking presents significant methodological challenges. Four basic approaches have been used: videotaping followed by stimulated recall, think-aloud methods, policy-capturing techniques, and ethnographic case studies.

Stimulated recall interviews are used most frequently. In this process-tracing method, the teacher views a videotape of him/herself planning or teaching a classroom lesson and is asked to stop the tape whenever s/he wishes to comment on or discuss thoughts or decisions occurring at that particular moment in the lesson. The researcher may also question or probe for thoughts and decisions.

The think-aloud method, another process-tracing approach, calls for a teacher to talk into a tape recorder as s/he plans a lesson or makes other preactive decisions (e.g., forming reading groups, selecting appropriate language arts activities, etc.). This method may also be followed by a stimulated recall interview as described above. The think-aloud approach is most appropriate in studies of preactive teacher thinking because verbalizing one's thoughts during instruction interferes with the process of interactive teaching.

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[4]Research on teacher decision making and cognitive processing is relatively recent. In addition to the review provided here, the reader may also wish to consult articles by Borko, Cone, Russo, Atwood & Shavelson (1979), Brophy (1983), Clark & Yinger (1979), Shavelson (1976), and Shavelson & Stern (1981), each of which provides a particular perspective for examining teacher decision making.

In policy-capturing studies, teachers are given hypothetical descriptions of students and/or situations and asked to report the judgments or decisions they make and the cues to which they attend in making their judgments. The approach has been used to study a variety of decision-making situations, from management of student behavior to content selection.

Finally, ethnographic case studies of individual teachers have provided rich descriptions of teacher behavior which, in turn, lead to insights about the hidden world of thinking and judgment that lies behind observable teacher behaviors. These insights provide new hypotheses about teacher thinking during instruction.

Clearly, research on teacher thinking generally and on teacher decision making in particular is at an early stage. As such, the findings to date are constrained by the limitations of the techniques used by researchers. Despite this, useful research has been conducted. Typically, research has divided teacher decision making into temporal phases. The *preactive* phase includes decisions made when planning and thinking prior to instruction. The *interactive* phase includes the decisions made during instruction. Completing the cyclical process are decisions and reflections made in the *postactive* or evaluative phase (Jackson, 1968).

Studies of Interactive Decision Making

Because teacher effectiveness tends to focus on what teachers are doing when they are actually teaching, we first consider studies of teacher thinking during the interactive phase. Interactive thinking is particularly difficult to study because it occurs in the complex and busy environment of the classroom where thoughts cannot be examined at leisure and where the pace is often frantic. Such a climate does not lend itself to reflective and analytic self-consciousness. Despite this, several studies have examined interactive instructional decision making. Four representative ones are reviewed here.

McNair & Joyce (1979) studied 10 teachers over a period of one school year as part of a larger project known as the South Bay Study. Using the technique of stimulated recall, the researchers interviewed each teacher on six different occasions. To learn more about the interactive information-processing strategies that teachers use when making decisions during instruction, the investigators established a classification scheme for categorizing concerns expressed by the teachers. Five major categories emerged: pupil, lesson content, procedures, time, and materials. In the course of the 60 stimulated-recall interviews, teachers mentioned a total of 1,249 concerns. Of these, 39% related to the pupils (e.g., their attitudes, behavior, and learning) and 32% were content-related (e.g., facts and ideas, objectives, and tasks). Concerns about direction giving, modifications of the normal routines, and scheduling procedures accounted for 14% of the total; materials accounted for 8%, and time concerns (e.g., pacing) accounted for 7%. In general, McNair and Joyce noted that the teachers focused on task completion rather than on thinking, and that there was little variation in thinking among the teachers studied.

Peterson and Clark (1978) reported similar findings in another stimulated-recall study of teachers' interactive thinking. The major cue considered by teachers was student participation and involvement with tasks. Student attention took priority over the quality of the discussions. Of the organizational, cognitive, and affective objectives cited by teachers, the most prevalent were organizational objectives that involved carrying out the plan and in which decision making focused on management. Peterson and Clark concluded from their findings that teachers considered alternatives only when instruction was going poorly and that, even then, they rarely made a decision to change the strategy.

This finding about the press for carrying out a predetermined plan was further investigated by Morine-Dershimer (1979). She found that teachers have a set of expectations about their planned lessons that represents a comprehensive mental image of lesson activities and content. This mental image has a potent influence on teaching because interactive decisions are apparently made when the teacher observes discrepancies between the mental image of how the lesson ought to go and the reality of how it actually goes. Three decision points were identified. The first occurred when there was little or no discrepancy between the plan and reality, which allowed teachers to follow established routines. The second occurred when minor discrepancies were observed; teachers considered limited alternatives and made minor decisions or changes during instruction. The third type involved a critical discrepancy between the teacher's mental image and the actual lesson. In these cases, teachers typically considered the information available but then postponed making any decision to change rather than adapting instruction to meet these unanticipated discrepancies.

A fourth investigation examined how teachers cope with unpredictable student behaviors (referred to here as "critical moments"). Shroyer's (1981) analysis of four mathematics teachers' stimulated recall interviews revealed three types of teacher response to critical moments: alleviation (any action that reduces the problem to a controllable level), exploitation (taking advantage of a teachable moment), and avoidance. The most prevalent was avoidance (or what Morine-Dershimer called postponement). This led Shroyer to the conclusion that teachers rely on routine behaviors in order to reduce the complexity of the classroom, that the absence of interactive teacher decision making is sometimes due to an inability to think of alternatives, and that the primary causes of teacher difficulty in dealing with discrepancies between

plan and reality were (1) their limited knowledge of the content itself and (2) their limited pedagogical repertoire or set of alternative strategies for teaching the content.

These studies of interactive decision making indicate a preoccupation by teachers with activity flow and procedural concerns, which suggests technical, rather than professional, teacher behavior. There is a striking absence of decisions aimed at promoting student understanding.

Studies of Planning Decisions

Morine-Dershimer's concept of the teacher's "mental image" of a planned lesson suggests that what is observed in the interactive stage of teaching is influenced by what teachers think about in the preactive phase. Consequently, we turn next to research on instructional planning.

Zahorik (1970) studied two groups of teachers to determine the effect of planning on actual instruction. One group of teachers was given two weeks to plan for a lesson and was provided with objectives and an outline of the content to be covered. The other group was asked to reserve an hour of classroom time but was given no further details about what they would be asked to do during that time. The teachers in both groups then taught a lesson, one group having planned for the instruction and the other teaching extemporaneously. The lessons were recorded, and Zahorik analyzed them for differences in sensitivity of teaching behavior, which he defined as "verbal acts of the teacher that permit, encourage, and develop pupils' ideas, thoughts, and actions." Zahorik found that the teachers who had not planned for instruction were more sensitive to and made more use of students' ideas and thoughts than those who had planned in advance. This suggests that the teachers who planned (and presumably created a mental image of a lesson) may have been less able to

attend to cues that arose during the interactive phase. In contrast, the teachers who taught spontaneously payed more attention to such cues and, as a result, made more interactive decisions designed to encourage thoughts and ideas.

Zahorik's findings may be explained by other studies of planning that suggest teachers' plans focus on establishing smooth activity flow rather than understanding. In one laboratory study, for instance, Zahorik (1975) found that, rather than considering objectives or purposes, 51% of the teacher-participants decided on content activities first, while only 28% considered objectives first. Pupil activities were a major consideration of 81% of the teachers. Zahorik concluded that the specification of objectives is not a focal point in preactive decision making.

Similarly, Peterson, Marx, and Clark (1978), in their study of 12 junior high school teachers, found that the teachers focused most often on content, strategies, and activities during planning, with the least amount of time spent on instructional objectives. This pattern persists in other studies. In fact, Taylor (1970) found that teachers determined purposes for lessons by first selecting a particular activity and then deciding what the activity could achieve instead of selecting particular objectives and then determining activities. Again, the evidence points to a preoccupation with activity flow rather than attention to the promotion of student understanding.

Reading Research That Relates to Decision Making

Some of the recently conducted reading instructional research has direct implications for teacher decision making. Three lines of research are of particular interest.

The first focuses on teacher decisions about establishing reading groups (Borko & Niles, 1982; Borko, Shavelson, & Stern, 1981). Such studies are of the policy-capturing type described earlier and, as such, are conducted in isolation from real classrooms and the constraints present in the instructional environment. While these studies provide a useful foundation regarding the thinking processes teachers *say* they use in forming groups, it is unclear whether the findings are accurate reflections of how such decisions are actually made (Duffy, 1982).

Another line of research focuses on teacher interruption behavior during children's reading and the way teachers respond to miscues (Allington, in press). Hoffman (1979) suggests that teacher feedback in response to reading miscues should be analyzed in three ways: (1) selectivity, or what to respond to, (2) timing, and (3) the nature of the prompt. He suggests that a teacher's decision to intervene when a student is reading is based on the teacher's theoretical orientation to reading (Hoffman & Kugle, 1981). For example, a teacher with a strong psycholinguistic orientation to reading may be likely to ignore miscues that do not distort the meaning of the text. Such decisions are thought to be independent of the basal text manual and are presumably aimed at promoting student learning. Similarly, the work of Harste and Burke (1977) is based on this hypothesis. However, research designed to test this hypothesis has failed to demonstrate an observable relationship between a teacher's theoretical orientation and his/her instructional decision making. In fact, the Hoffman and Kugle correlations between beliefs and teacher-student feedback were small, ranging from a high of .33 to a low of .01, with most values below .20. This does little to support the contention that a strong relationship exists between teacher conception of subject matter and classroom instruction. Duffy and Anderson (1982) found similar results. They

set out to describe the relationships between a teacher's implicit reading theory held in the abstract and teachers' actual practice. After a three-year study in which three sets of teachers were observed for one year each, they concluded that decisions are not influenced as much by the teacher's theory as by the pressures of the instructional context. Specifically, the teachers focused on maintaining a smooth activity flow, on following the sequence prescribed in the basal textbook, and on providing "structure" for the low-group students. These pressures took priority in the teachers' minds, and their implicit theories came into play only after being filtered through these priorities. The only time they selected from among alternatives was when establishing organizational procedures early in the school year (such as when forming reading groups). Once instruction was initiated, all the teachers seemed to follow the conception embodied in the basal text. The behavior of the teachers was more technical than professional, and there was little evidence of reflective decision making.

The third line of reading research examines teacher use of basal materials and has strong implications for the study of decision making. Most estimates indicate that 85-90% of American teachers follow one or another basal textbook, and that in many cases the basal is mandated rather than selected by individual teachers. This itself places a severe restriction on instructional alternatives. In addition, Durkin's (1981) report that teachers' guides emphasize practice activities rather than instruction suggests a further restriction on the number of alternatives available. Shannon's (1981) study of why teachers so confidently use basal texts also has implications for decision making. He found that all 26 teachers he studied believed that the "commercial materials supplied the continuity, the instruction and the assessment methods for their reading instruction (p. 27)." In Shannon's terms, teachers

"reify" the basal text. In so doing, they apparently rationalize their lack of instructional decision making and assign this function to the developers of commercial text materials.

Summarizing the Decision-Making Research

The findings from studies of teacher decision making do not support the assumption that there is a direct relationship between teacher decision making and teacher effectiveness. While it is intuitively sensible that such a relationship *ought* to exist, there is little evidence that it does. Instead, the data suggest that teachers do not rely upon rational models to make decisions about developing student understanding but, instead, focus on procedural concerns regarding classroom organization and management. This apparently happens because of the press of environmental conditions that encourage teachers to follow the prescriptions of the instructional materials in a technical, rather than professional manner and to be suppliers of activities and managers of the environment rather than explainers who develop insights and understanding. These findings are of particular concern to reading educators, who believe that a hallmark of the effective teacher is decision making regarding matters of reading content, interpretation of content, and selection of instructional strategies, decisions that are conspicuous by their absence in the research. In fact, based on data collected to date, one must conclude that effective teachers are effective because they generate a great deal of time on task through the use of effective management techniques, not because they select from among alternatives using a decision-making model.

Discussion

The question that now needs to be answered is "Why do the data indicate that classroom reading teachers make few instructional decisions?" We believe

that effective teachers *do* make decisions, but researchers don't find evidence of them because they generally lack knowledge about what they are looking for and how to find it. Researchers may not yet be methodologically sophisticated enough to uncover all facets of teacher decision making. Given this condition, researchers cannot assume that decision making does not exist simply because they have not yet found it. Three illustrations of the lack of sophistication in the area of research on teacher decision making follow.

First, researchers may have made erroneous assumptions about how teachers make use of knowledge. A new literature on knowledge use in teaching suggests a contradiction between the reality of classroom life and the conventional view that formal knowledge provides a rational basis for conducting practice.

Consider the following examples. First, Schon (1983) states that an emphasis on solving classroom problems by rationally applying relevant knowledge disregards the prior importance of problem setting--that is, first making sense of the uncertainty, complexity, and parameters of the problem before seeking its solution. Similarly, Cazden (1976) found during a one-year return to classroom teaching that there were unexpected and significant problems in trying to think "abstractly in the face of all that concrete reality." Finally, Lampert (1982) points out that many situations in actual teaching represent not problems that can be solved but dilemmas having no solution, and that rather than solving problems as is assumed in the decision-making research, teachers may instead learn to cope with dilemmas. All three examples suggest a conceptual and practical gap between what researchers and teacher educators believe the role of formal knowledge to be and the patterns of such knowledge use in actual practice.

If such a gap exists, then the rational application model of knowledge use many prove to be an idealized and inappropriate one (Jackson, 1971; Lortie, 1975) that misleads teachers rather than helping them. For instance,

if teachers are trained in the rational model and then find that it does not work in reality, they may reject formal knowledge as impractical and resort to trial and error, routinized behavior, or other strategies for making decisions. We hope some may develop views of formal knowledge that are more helpful in teaching and in thinking about classrooms. If this is so, research may not be finding much decision making because the assumptions about how teachers use knowledge have been conceptualized and examined from a rationalistic perspective that does not match the reality of classroom life.

Second, researchers' examination of instructional decision making may not reflect the complexity of instruction itself and, as such, may not capture the kinds of decisions teachers make during instruction. For instance, it may be that researchers find decisions to be limited to procedural concerns because they do not know what other kinds of instructional decisions to look for. They would begin to see a broader range of possible decisions if they thought in terms of two kinds of instructional concerns: *procedural* and *substantive* (see Fenstermacher, 1980 and Fisher, Berliner, Filby, Marliave, Cahen, Dishaw, & Moore, 1978 for discussion of this distinction). *Procedural decisions* are those that have dominated the research to date and are primarily concerned with maintaining the activity flow through management of student behavior, time allocations, procedures (e.g., directions), instructional pace, quantitative monitoring of student responses and completion of tasks. *Substantive decisions*, in contrast, are those decisions designed to promote student understanding of the content and the processes involved in reading, and include decisions about what to teach, interpretation of the content, exploitation of critical moments, qualitative restructuring of student responses, selection of alternative explanations or strategies, and affective responses to student interaction with content.

Such substantive decisions can be further divided into content-related decisions and decisions about pedagogical maneuvering. Content decisions are usually made in the preactive stage and focus on what to teach, the outcomes to emphasize, the materials to be used, the examples and non-examples which will serve as illustrations, and the demonstration or model to be provided. Pedagogical maneuvering decisions also focus on substantive issues, but they tend to occur *during* instruction when student responses indicate that things are not going according to plan and alternatives must be selected spontaneously. They include the selection of alternative ways to model, alternative illustrative highlighting, redirecting student's responses to a task, and terminating or continuing instruction for groups or parts of groups. Decisions about such substantive issues are seldom reported in the research. This may be because instruction itself has been imprecisely defined, leading to unfocused observation of instructional decision making.

Third, it may be that researchers have not found teachers making instructional decisions because they do not understand how teachers make sense of their workplace. Recent research on teachers and their work has emphasized the difficulty of working in classrooms (Shulman, 1981). Students are taught in groups of 25 or 30, there are subtleties of social interaction to be negotiated and dealt with, and there are educational mandates to follow. Hence, the typical classroom teacher must keep large numbers of students engaged for five hours or more in ways that the principal and parents perceive as appropriate going-to-school behavior, must cover the mandated basal text, and must prepare children to do well on a particular standardized test of reading achievement. Further, there are very real limits to the range of decisions teachers can make in this context. For instance, while reading educators often assume that teachers can choose the approach and materials to be used,

in reality such choices are seldom available. Teachers must use the mandated basal textbook and, if other alternatives (such as language experience) are to be used at all, they must be camouflaged to look like the "regular" program. Because of these and other constraints, it is not surprising that teachers make few substantive instructional decisions. Instead, they strive to simplify a complex instructional environment and, when viewed from this perspective, their behavior is adaptive and sensible. The decisions they make under such conditions are those that the research indicates they *are* making: procedural decisions about which basal-text reading group to assign children to; how to involve pupils in tasks; how to insure that their mental image of activity flow is realized; and, in response to reading miscues, how to expedite the smooth flow of instructional turn taking in the group. It may be that the decision-making research has not been based on an accurate understanding about what decisions teachers can reasonably make in classrooms and, as a result, has not produced accurate findings.

Conclusions and Future Directions

Certainly, the results from research on instructional decision making have been disappointing, particularly regarding the failure to establish a direct link between teacher decision making and reading teacher effectiveness. However, the absence of such findings does not mean that decision making is non-existent or that, if researchers knew enough about it, teachers could not be made more effective by becoming better decision-makers. Indeed, we believe that the most effective teachers are those who plan and who use the multitude of cues and insights occurring during interactive teaching to make decisions during instruction about how to make sense of the reading process.

Establishing a relationship between such decision making and effective reading instruction is a next step in the study of reading teacher effectiveness.

In taking this step, two premises must guide the research effort. First, instructional decision making must be viewed through the lens of classroom realities and constraints and from the perspective of how teachers use knowledge. Second, researchers must intentionally begin looking more closely at the nature of instruction and the instructional decisions that go beyond procedural concerns. Specifically, they must examine how teachers decide to maximize students' understanding of the content and processes involved. If these two conditions are an integral part of the conceptualization and design of decision-making research, researchers will soon be able to describe instructional decision making more fully and to substantiate the relationship that exists between such decision making and reading teacher effectiveness.

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